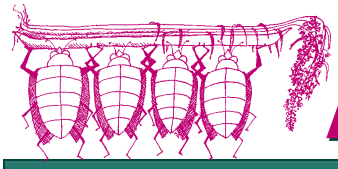

APPENDIX 6

Wisconsin DNR's Purple Loosestrife Control Recommendations and Traditional Methods

Effective long-term control of purple loosestrife in Wisconsin must include both traditional control methods as well as biological control. Each has its advantages and you must decide carefully which to use. No matter what you decide, the most important thing is to *start* controlling the purple loosestrife in your wetland *now*.

Use traditional methods for quick and effective control on all sites for which you have adequate resources and will be successful. These measures are labor intensive, and expensive on large sites, so *small or low-density sites* are most often controlled this way. These techniques will require additional annual vigilance. Even if all purple loosestrife is accessible, some plants will be missed and a soil seed bank ensures germination of new purple loosestrife plants for up to a decade. Thus, you must annually treat any missed or new plants. You should also destroy any purple loosestrife in surrounding wetlands to stop seed dissemination to your site. In fact, if your site is in an area surrounded by other loosestrife infestations, hand control may not be worth the effort. These methods can also be very disruptive to wetlands and, in addition to cost and chemicals, suggest a serious consideration of alternative biological controls.

Biological control must be started in all purple loosestrife infestations where there is no effective traditional control, no matter what size, though this is often on larger sites. Some small infestations should receive beetles, too, to serve as insectaries — sites for growing insects for propagation stock — unless purple loosestrife seed from these sites will infest other nearby wetlands. Biological control uses plant predator insects to control PL. It is inexpensive and natural and can become self-sustaining and self-disseminating with minimal disturbance to wetlands. However, set-up time is longer and its outcome less certain. An insect population must grow commensurately large to affect the local purple loosestrife infestation, a process that usually takes at least several years, may require several infusions of propagated insects, and may not work on some sites, especially if frequently flooded. Many biological control insect releases in Wisconsin, however, have been quite successful, showing good purple loosestrife control in 2-3 years. For more information, contact a regional Wisconsin DNR Aquatic Plant Management Coordinator or the Purple Loosestrife Biological Control Program Coordinator by mail at Wisconsin DNR Research Center, 1350 Femrite Drive, Monona, WI 53716, by e-mail at **brock.woods@dnr.state.wi.us,** or telephone at 608-221-6349.

Traditional controls and biological control may be used together on the same site (or area) as long as insects have foliage to eat and are not exposed to herbicides. One way is to cut stems just beneath the inflorescences to prevent seed production, but provide foliage. In fact, integrating controls may be the best plan, since some immediate purple loosestrife control is established while strong-flying biological control insects gradually become ubiquitous enough to find and control all loosestrife plants—perhaps eventually replacing all traditional controls!

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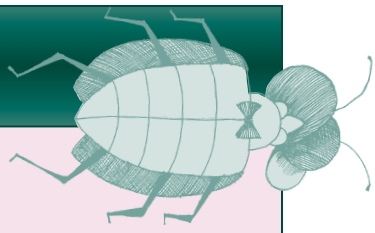

TRADITIONAL METHODS

Preventing purple loosestrife from infesting new sites is the easiest control. Be sure local gardens have no illegal purple loosestrife plantings that produce seed. Monitor your sites (annually) and remove any small colonies or new young plants. Especially check areas near moving water, wetland/upland edges, storm sewer outlets or gardens that may have contained purple loosestrife. One mature purple loosestrife plant produces over 2 million seeds a season, so learn to recognize pre-flowering plants or search when purple loosestrife just starts to bloom. Destroy them before they mature, flower and drop seeds, which can start before flowering ends. Dispose of plants in a capped landfill, or dry and burn them. Composting will not kill the seeds. Keep clothing and equipment seed-free to prevent its spread. Take responsibility to remove new plants wherever you see them. (Get landowner permission first.)

Mechanical Control - Mechanical control includes cutting, pulling, or digging and drowning. Cutting is best done just before plants begin flowering. Cutting too early encourages more flower stems to grow. If done too late, seed may have already fallen. Since lower pods can drop seed while upper flowers are still blooming, check for seed. If none, simply bag all cuttings (to prevent them from rooting). If there is seed, cut off each top while carefully holding it upright, then bend it over into a bag to catch any dropping seeds. Watch for holes in your bags so you don't spread seed where you drag the bags.

Pulling and digging can be effective, but can also be disruptive by creating disturbed bare spots, which are good sites for purple loosestrife seeds to germinate, or leaving behind root fragments that grow into new plants. Use these methods primarily with small plants in loose soils, since they do not usually leave behind large gaps nor root tips; large plants with multiple stems and brittle roots often do. Dispose of plants as above. Drowning young purple loosestrife is effective if plants are *completely* submerged for a year (often after being cut to decrease height.)

Chemical Control - This is usually the best way to eliminate purple loosestrife quickly, especially with mature plants. Chemicals used have a short soil life. Timing is important: Treat in late July or August, but before flowering to prevent seed set. Dispose of plant parts as above. Always back away from sprayed areas as you go to prevent getting herbicide on your clothes.

The best method is to cut stems and paint the base cuts with herbicide. Cut low on the stem (about knee level) with one hand and apply the herbicide with a second hand, while carefully stuffing the plant top into a plastic bag with the third and fourth hands (a two person crew works well for this). The herbicide can be applied with a small drip bottle or spray bottle, which can be adjusted to release only a small amount. Try to cover the entire cut portion of the stem, but not let the herbicide drip onto other plants since it is non-selective and can kill any plant it touches. Glyphosate herbicides *Roundup* and *Glyfos* are typically used, but if it is very wet in the area use *Rodeo*, a glyphosate formulated for use over water. Stem applied

Appendix 6.

herbicides should be mixed to 20 to 40% active ingredient. Since you must treat at least some stems of each plant and they often grow together in a clump, all stems in the clump should be treated to be sure all plants are treated. Bag all cuttings since they can root if they come in contact with water or moist soil and dispose of as above.

Another method is using *very carefully targeted* foliar applications of herbicide (*not* broadcast spraying). This may reduce costs for sites with very high densities of purple loosestrife, since the work should be easier and there will be fewer additional plant species to hit accidentally. Use a glyphosate formulated for use around water. A weaker solution of around 1% active ingredient can be used and it is generally necessary to wet only 25% of the foliage to kill the plant. *Triclopyr* (*Garlon* 3A) is another herbicide that can be used as a foliar spray. It is formulated for use around water and does not harm grasses or sedges, but it has *not* received final approval from the U.S. EPA for wetlands. Wet most of the foliage if using this chemical.

You must obtain a permit from Wisconsin DNR before applying any chemical over standing water. The process has been streamlined for control of purple loosestrife and there is no cost. The appropriate person to contact is your regional Wisconsin DNR Aquatic Plant Management Coordinator (list available from biological control project). S/he will want to know about your site and plan, may make further suggestions, and will issue your permit.

Chemicals, Tools, and Costs – Chemicals and tools to apply them are often available from local farm cooperative stores and garden shops. Your Aquatic Plant Management Coordinator may be able to help you locate a supplier nearby. If you cannot get the herbicides locally, a private business in DeForest, Wisconsin will ship them. Contact them by calling 800-362-8049.

Roundup is for drier sites and costs about $90/gallon. Buying in volume will save you money: 2.5 gallons of *Roundup* costs about $110. It requires no additives. *Rodeo* is for very wet sites and costs around $120/gallon. It must be mixed with a nonionic surfactant, about $18/gallon. Monsanto (800-332-3111) manufactures both of these glyphosates. *Glyfos* is a generic version of *Roundup* made by Cheminova (800-548-6113); if interested, call the company for a local supplier. *Glyfos AQ* is the equivalent to *Rodeo*, but may not yet be generally available. Concentrations discussed above are approximate since requirements are variable on different populations of plants in different situations. Test yours to be sure you use an appropriate amount of active ingredient. Call manufacturers or your local Aquatic Plant Management Coordinator if you have additional questions.